

WHAT IS CLAIMED

1           1.    A method of placing a call from an integrated  
2           services digital network (ISDN) telecommunications device  
3           over a communication circuit comprising the steps of:

4               (a) providing said ISDN telecommunications device  
5           with a dialing mechanism that includes overlap mode ISDN  
6           dialing and enbloc mode ISDN dialing; and

7               (b) causing said ISDN telecommunications device to  
8           place a call over said communication circuit in accordance  
9           with said dialing mechanism provided in step (a).

1           2.    A method according to claim 1, wherein step (b)  
2           comprises causing said ISDN telecommunications device to  
3           place a call over said communication circuit using said  
4           overlap mode ISDN dialing of the dialing mechanism provided  
5           in step (a).

1           3.    A method according to claim 2, wherein step (b)  
2           comprises causing said ISDN telecommunications device to  
3           place a call using said overlap mode ISDN dialing of the  
4           dialing mechanism provided in step (a), for an OFF-HOOK  
5           condition of said ISDN telecommunications device.

1           4.    A method according to claim 1, wherein step (b)  
2           comprises causing said ISDN telecommunications device to  
3           place a call over said communication circuit in accordance  
4           with enbloc mode ISDN dialing of the dialing mechanism  
5           provided in step (a).

1           5.    A method according to claim 4, wherein step (b)  
2           comprises causing said ISDN telecommunications device to  
3           place a call using said enbloc mode ISDN dialing of the  
4           mechanism provided in step (a), for an ON-HOOK condition of  
5           said ISDN telecommunications device.

1           6.    A method according to claim 1, wherein step (b)  
2           comprises preventing said ISDN telecommunications device  
3           from placing a call using said enbloc mode ISDN dialing of  
4           the mechanism provided in step (a), for an OFF-HOOK  
5           condition of said ISDN telecommunications device.

1           7.    A method according to claim 1, wherein step (b)  
2           comprises causing said ISDN telecommunications device to  
3           place a call using said enbloc mode ISDN dialing of the  
4           mechanism provided in step (a), only for an ON-HOOK  
5           condition of said ISDN telecommunications device.

1           8.    A method according to claim 1, wherein said  
2           overlap mode ISDN dialing of said dialing mechanism  
3           provided in step (a) is operative, when executed in step  
4           (b), to transmit an overlap mode call set-up message that  
5           causes a network communications device coupled to said  
6           communication circuit to send back a call set-up  
7           acknowledgement message, and is thereafter operative to  
8           transmit a cascaded sequence of D channel information  
9           messages, each containing the identification of a  
10          respective digit of a called number.

1           9. A method according to claim 8, wherein said  
2 overlap mode ISDN dialing of said dialing mechanism  
3 provided in step (a) is further operative, when executed in  
4 step (b), to generate an audible dial tone in response to  
5 said set-up acknowledgement message.

1           10. A method according to claim 8, wherein said  
2 overlap mode ISDN dialing of said dialing mechanism  
3 provided in step (a) is further operative to store  
4 respective digits of a called number and, when executed in  
5 step (b), to transmit said cascaded sequence of D channel  
6 information messages identifying said respective digits of  
7 said called number as stored in step (a).

1           11. A method according to claim 8, wherein said  
2 overlap mode ISDN dialing of said dialing mechanism  
3 provided in step (a) is further operative, when executed in  
4 step (b), to transmit said cascaded sequence of D channel  
5 information messages identifying said respective digits of  
6 a called number as keyed in by a user of said  
7 telecommunications device.

1           12. A method according to claim 8, wherein said  
2 overlap mode ISDN dialing of said dialing mechanism  
3 provided in step (a) is operative, when executed in step  
4 (b), to transmit a sequence of DTMF tones respectively  
5 associated with said cascaded sequence of D channel  
6 information messages identifying digits of said called  
7 number.

1           13. A method according to claim 8, wherein said  
2 overlap mode ISDN dialing of said dialing mechanism  
3 provided in step (a) is further operative to store  
4 respective digits of a called number and, when executed in  
5 step (b), to transmit said cascaded sequence of D channel  
6 information messages identifying respective digits of a  
7 selected one of said called number as stored in step (a),  
8 and another called number as keyed in by a user of said  
9 telecommunications device.

1           14. A method according to claim 8, wherein said  
2 overlap mode ISDN dialing of said dialing mechanism  
3 provided in step (a) is further operative, when executed in  
4 step (b), to simulate a far end ringing signal, in response  
5 to receiving a message from said network communications  
6 device indicating that it has received said cascaded  
7 sequence of D channel information messages identifying  
8 respective digits of said called number.

1           15. A method according to claim 1, wherein said  
2 telecommunications device comprises an ISDN test set.

1           16. A method according to claim 1, wherein said  
2 enbloc mode ISDN dialing of said dialing mechanism provided  
3 in step (a) is operative, when executed in step (b), to  
4 transmit an enbloc mode call set-up message containing  
5 identifications of all of the digits of a called number.

1           17. A method according to claim 16, wherein said  
2 enbloc message contains identifications of all of the  
3 digits of the most recently dialed number.

1           18. A method according to claim 16, wherein said  
2 enbloc mode ISDN dialing of said dialing mechanism provided  
3 in step (a) is further operative, when executed in step  
4 (b), to simulate a far end ringing signal, in response to  
5 receipt of a call set-up acknowledgement message from a  
6 network communications device coupled to said communication  
7 circuit.

1           19. A method according to claim 16, wherein said  
2 dialing mechanism provided in step (a) is further operative  
3 to store respective digits of a further called number, and  
4 is further operative, when executed in step (b), to effect  
5 overlap mode ISDN dialing of a cascaded sequence of D  
6 channel information messages identifying said respective  
7 digits of said further called number as stored in step (a).

1           20. A method according to claim 19, wherein said  
2 dialing mechanism provided in step (a) is further  
3 operative, when executed in step (b), to transmit a  
4 sequence of DTMF tones respectively associated with said  
5 cascaded sequence of D channel information messages  
6 identifying digits of said called number.

1           21. A method according to claim 16, wherein said  
2 dialing mechanism provided in step (a) is further  
3 operative, when executed in step (b), to effect overlap  
4 mode ISDN dialing of a cascaded sequence of D channel  
5 information messages identifying said respective digits of  
6 a further called number as keyed in by a user of said  
7 telecommunications device.

1           22. A method according to claim 21, wherein said  
2 dialing mechanism provided in step (a) is further  
3 operative, when executed in step (b), to transmit a  
4 sequence of DTMF tones respectively associated with said  
5 cascaded sequence of D channel information messages  
6 identifying digits of said called number.

1           23. A method of determining whether a communication  
2 circuit is qualified for integrated services digital  
3 network (ISDN) signalling comprising the steps of:

4           (a) coupling a ISDN telecommunications device to said  
5 communication circuit;

6 (b) while said ISDN telecommunications device is ON-  
7 HOOK, causing said ISDN telecommunications device to  
8 attempt to place a call over said communication circuit  
9 using enbloc mode ISDN dialing; and

10 (c) causing said ISDN telecommunications device to  
11 provide an indication of whether said communication circuit  
12 is qualified for ISDN signalling in accordance with whether  
13 or not a call set-up acknowledgement message is received  
14 from a network communications device coupled to said  
15 communication circuit.

1 24. A method according to claim 23, wherein step (c)  
2 comprises causing said ISDN telecommunications device to  
3 provide an indication that said communication circuit is  
4 qualified for ISDN signalling in response to receipt of  
5 said call set-up acknowledgement message.

1 25. A method according to claim 23, wherein step (c)  
2 comprises causing said ISDN telecommunications device to  
3 provide an indication that said communication circuit is  
4 not qualified for ISDN signalling absent receipt of said  
5 call set-up acknowledgement message.

1 26. A method according to claim 24, wherein said  
2 telecommunications device comprises an ISDN test set.

1           27. An integrated services digital network (ISDN)  
2 telecommunications device comprising an ISDN interface, and  
3 a supervisory control processor which is operative to cause  
4 said ISDN interface, when coupled to a communication  
5 circuit, to exchange, with a device coupled to a second  
6 location of said communication circuit, digital  
7 communication messages over an ISDN channel, and including  
8 a dialing mechanism that includes overlap mode ISDN dialing  
9 and enbloc mode ISDN dialing, and being operative to  
10 selectively place a call over said communication circuit in  
11 accordance with either of said overlap mode ISDN dialing  
12 and enbloc mode ISDN dialing of said dialing mechanism.

1           28. An ISDN telecommunications device according to  
2 claim 27, wherein said telecommunications device comprises  
3 an ISDN test set.

1           29. An ISDN telecommunications device according to  
2 claim 27, wherein said dialing mechanism is operative, for  
3 an OFF-HOOK condition, to cause a call to be placed over  
4 said communication circuit using overlap mode ISDN dialing.

1           30. An ISDN telecommunications device according to  
2 claim 27, wherein said dialing mechanism is operative, for  
3 an ON-HOOK condition, to cause a call to be placed over  
4 said communication circuit using enbloc mode ISDN dialing.



1           31. An ISDN telecommunications device according to  
2 claim 27, wherein said dialing mechanism is operative, for  
3 an OFF-HOOK condition, to prevent a call from being placed  
4 over said communication circuit using enbloc mode ISDN  
5 dialing.

1           32. An ISDN telecommunications device according to  
2 claim 29, wherein said dialing mechanism is operative to  
3 cause the transmission of an overlap mode call set-up  
4 message that causes a network communications device coupled  
5 to said communication circuit to send back a call set-up  
6 acknowledgement message, and is thereafter operative to  
7 transmit a sequence of D channel information messages, each  
8 containing the identification of a respective digit of a  
9 called number.

1           33. An ISDN telecommunications device according to  
2 claim 32, wherein said overlap mode ISDN dialing of said  
3 dialing mechanism is further operative to generate an  
4 audible dial tone in response to said set-up  
5 acknowledgement message.

1           34. An ISDN telecommunications device according to  
2 claim 32, further including memory for storing respective  
3 digits of a called number and wherein said overlap mode  
4 ISDN dialing of said dialing mechanism is further operative  
5 to transmit D channel information messages identifying said  
6 respective digits of said stored called number.

1           35. An ISDN telecommunications device according to  
2 claim 32, wherein said overlap mode ISDN dialing of said  
3 dialing mechanism is further operative to transmit D  
4 channel information messages identifying said respective  
5 digits of a called number as keyed in by a user of said  
6 telecommunications device.

1           36. An ISDN telecommunications device according to  
2 claim 32, wherein said overlap mode ISDN dialing of said  
3 dialing mechanism is operative to transmit a sequence of  
4 DTMF tones respectively associated with said D channel  
5 information messages identifying digits of said called  
6 number.

1           37. An ISDN telecommunications device according to  
2 claim 32, further including memory for storing respective  
3 digits of a called number, and wherein said overlap mode  
4 ISDN dialing of said dialing mechanism is further operative  
5 to transmit D channel information messages identifying  
6 respective digits of a selected one of said stored called  
7 number, and another called number as keyed in by a user of  
8 said telecommunications device.

1           38. An ISDN telecommunications device according to  
2 claim 32, wherein said overlap mode ISDN dialing of said  
3 dialing mechanism is further operative to simulate a far  
4 end ringing signal, in response to said ISDN  
5 telecommunications device receiving a message from said  
6 network communications device indicating that it has  
7 received said D channel information messages identifying  
8 respective digits of said called number.

1           39. An ISDN telecommunications device according to  
2 claim 30, wherein said enbloc mode ISDN dialing of said  
3 dialing mechanism is operative to transmit an enbloc mode  
4 call set-up message containing identifications of all of  
5 the digits of a called number.

1           40. An ISDN telecommunications device according to  
2 claim 39, wherein said enbloc message contains  
3 identifications of all of the digits of the most recently  
4 dialed number.

1           41. An ISDN telecommunications device according to  
2 claim 39, wherein said enbloc mode ISDN dialing of said  
3 dialing mechanism is further operative to cause the  
4 generation of simulated far end ringing signal, in response  
5 to receipt of a call set-up acknowledgement message from a  
6 network communications device coupled to said communication  
7 circuit.

1           42. An ISDN telecommunications device according to  
2 claim 39, further including memory for storing respective  
3 digits of a further called number, and wherein said dialing  
4 mechanism is further operative to effect overlap mode ISDN  
5 dialing of D channel information messages identifying said  
6 respective digits of said further called number.